

# **ARIZONA WATER BANKING AUTHORITY**

## **STORAGE FACILITY INVENTORY**



**UPDATED**

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**FINAL Draft**

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## **Introduction and Background**

Pursuant to A.R.S. §45-2452(A), the Arizona Water Banking Authority (AWBA) was required to develop a Storage Facility Inventory (Inventory) of all existing storage facilities in Arizona prior to March 1, 1997. The purpose of the Inventory was "...to determine whether storage facilities exist in this state to meet the water storage needs of the authority for the following ten years" (A.R.S. §45-2452(D)). Pursuant to A.R.S. §45-2452(F), the AWBA is required to update the Inventory at least once every five years. As such, the 1997 Inventory was updated in 2002, 2005 and 2011. In addition to meeting the mandatory update requirement, the Storage and Interstate Release Agreement (SIRA) requires identification of recharge facilities in the Inventory prior to the AWBA utilizing those facilities for interstate water storage. According to the most current Ten-Year Plan, the AWBA does not expect to conduct interstate water storage at least through 2026.

With the exception of interstate water storage, inclusion of a facility in the Inventory does not require the specific use of such facility in the future. Instead, the AWBA will continue to determine through its Annual Plan of Operation which facilities will be used. Conversely, excluding a facility in the Inventory does not preclude the AWBA from utilizing that facility in a future Annual Plan.

In addition to available storage capacity at permitted recharge facilities, there are two other factors affecting the AWBA's ability to store water: water availability and funding availability. Pursuant to A.R.S. § 45-2427, the AWBA shall not store Colorado River water that would have otherwise been used in the state. As shortage conditions become more probable, the Excess CAP water pool that is available for AWBA use is becoming less reliable as a water source. In fact, in the AWBA's most current Ten-Year Plan, the AWBA assumes that no Excess CAP water will be available except in 2017. If normal conditions prevail, according to Table 7 of the Ten-Year Plan, the AWBA could have nearly 725,000 acre-feet of water to store over the next ten years ranging from between 60,000 and 100,000 acre-feet per year.

Funding availability coupled with increased costs to purchase and store water will also decrease the need for capacity. Between 2017 and 2022, the cost to deliver excess CAP water for recharge are expected to increase by approximately 40%. As an example, in 2017, \$1 million will pay for the development of an estimated 4,500 acre-feet of long-term storage credits (credits). In 2022, \$1 million will only pay for the development of roughly 3,200 acre-feet of credits, a reduction of nearly 30%. This reduction will limit the AWBA's need for capacity particularly in the Tucson and Pinal AMAs where funding has been the primary limiting factor.

## Recharge Facilities Used by AWBA

The AWBA currently holds or has held water storage permits at 28 recharge facilities<sup>1</sup>. Those facilities have a collective capacity of about 1.5 million acre-feet, close to 75% of all permitted recharge capacity. Only one, the Superstition Mountain Recharge Project, has become operational since the Storage Facility Inventory that was completed in 2011. Of the 1.5 million acre-feet of capacity, approximately 820,000 acre-feet of capacity is located in the Phoenix AMA, 330,000 acre-feet in the Pinal AMA and nearly 300,000 acre-feet in the Tucson AMA. Table 1 on the following page shows the capacity permitted for all recharge projects by AMA where the AWBA has held or continues to hold a permit to store water. Of these facilities where the AWBA has permits, there are three where the AWBA has never stored water: 1) Hassayampa Recharge Facility, 2) Kai Farms Avra Valley and 3) Vidler Water Company Recharge Project. Moreover, some of these facilities are no longer permitted or not operational as facilities. In some cases, the AWBA has opted not to renew an expired storage permit because of a lack of storage capacity available to the AWBA at the facility. Projects highlighted in Table 1 are actively used by the AWBA today.

In addition to the AWBA water storage, facility operators and other recharge partners also store CAP water at these facilities. While the AWBA anticipates the availability of certain volumes of storage capacity for planning purposes, actual capacity available to the AWBA in any given year is subject to facility operation as well as the volume of storage capacity used by others. In 2013, to address potential future competing demands at its own recharge facilities, CAWCD developed a prioritization policy for the use of its facilities. CAWCD operates six recharge projects, where the AWBA has stored water, with a total capacity of approximately 300,000 acre-feet. If in any year there is insufficient capacity to meet all scheduled demands after consultation with its customers on sharing use of capacity, CAWCD will prioritize use of its facilities in accordance with its policy. Under the policy, the AWBA is afforded the same priority as others with the statutory firming obligations and for the CAGR's replenishment reserve, ahead of CAP long and short-term contract holders.

Recently, water users in the Phoenix and Tucson AMA prepared an innovative joint proposal for a concept called inter-AMA water storage and firming. Under the proposal, a CAP M&I subcontractor in the Phoenix AMA could store a portion of their entitlement in the Tucson AMA at a Tucson CAP M&I subcontractor's USF. In-turn, a Tucson M&I subcontractor would agree to accept the recovered credits in the future in lieu of a direct delivery to their USF. The water would be delivered instead to the

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<sup>1</sup> Two of the 28 recharge projects operate under two facility permits each: Agua Fria Recharge Project (AFRP) and the Gila River Indian Irrigation and Drainage District (GRIIDD) GSF. The AFRP continues to operate under a constructed and a managed permit. The GRIIDD held a permit for the Phoenix AMA and one for the Pinal AMA as the boundaries of the District crossed the AMA boundary. The GRIIDD no longer holds permits.

Phoenix M&I subcontractor's treatment plant. To evaluate the concepts of inter-AMA water storage, Phoenix and Tucson CAP water users implemented the first inter-AMA storage effort on a small scale in the Tucson AMA in 2015. For 2017, the plan is to expand the volume to 40,000 acre-feet. As a result, the AWBA's storage capacity at the Southern Avra Valley Storage and Recovery Project and the Avra Valley Recharge Project will be reduced by a combined volume of approximately 15,000 acre-feet, shifting storage to other locations within the AMA. Although inter-AMA storage by others could affect the location of AWBA water storage going forward, sufficient storage capacity will still be available to the AWBA in the Tucson AMA.

Taking multiple factors into account, according to the most recent Ten-Year Plan<sup>2</sup>, approximately 253,000 acre-feet of capacity is available to the AWBA at recharge facilities where the AWBA currently stores water. Of the 253,000 acre-feet, approximately 56,000 acre-feet is located in the Phoenix AMA, 140,000 acre-feet of capacity is located in the Pinal AMA and just over 56,000 acre-feet<sup>3</sup> is located in the Tucson AMA.

The details for all these facilities can be found in Appendix A to this Inventory. Appendix A lists the facility permit number and duration, facility name, Active Management Area (AMA), permit holder, permit volume, type of water and recharge method. With the exception of the Granite Reef Underground Storage Project and the Roosevelt Water Conservation District Groundwater Savings Facility, all the existing recharge facilities used by the AWBA are permitted for CAP water only.

Through 2015, the total balance of credits accrued by the AWBA through water storage is 3,981,187 acre-feet including 3,430,145 acre-feet for intrastate banking and 551,041 acre-feet of credits for interstate banking. In the Phoenix AMA, the total cumulative balance is 1,833,511 acre-feet including 51,009 acre-feet for interstate banking. In the Pinal AMA, the total cumulative balance is 1,392,782 acre-feet including 390,241 acre-feet for interstate banking. Finally, in the Tucson AMA, the total cumulative balance is 754,894 acre-feet including 109,791 acre-feet for interstate banking. Table 2 on page 4 identifies the total volume of credits accrued by the AWBA through water storage at individual storage facilities within each AMA. Although the AWBA has also accrued credits through other means such as purchases, those credits were not included in the total since they are not relevant to the analysis for determining storage capacity needs.

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<sup>2</sup> Annual Report. (2015) Arizona Water Banking Authority, Appendix D. The volume has been adjusted down to 253,000 as the water storage permit for the SRP GSF was not obtained.

<sup>3</sup> Assuming inter-AMA water storage, this volume would be approximately 41,000 acre-feet.

**Table 1: Permitted Volume of Recharge Projects with AWBA Water Storage Permits**

FACILITY NAME	FACILITY TYPE	AMA	PERMITTED VOLUME
TONOPAH DESERT RECHARGE PROJECT	USF	Phoenix	150,000.00
AGUA FRIA RECHARGE PROJECT	USF	Phoenix	100,000.00
GRANITE REEF UNDERGROUND STORAGE PROJECT	USF	Phoenix	93,000.00
HASSAYAMPA RECHARGE FACILITY MANAGED	USF	Phoenix	50,000.00
HIEROGLYPHIC MTNS RECHARGE PROJECT	USF	Phoenix	35,000.00
SUPERSTITION MOUNTAINS RECHARGE PROJECT	USF	Phoenix	25,000.00
SALT RIVER PROJECT	GSF	Phoenix	89,000.00
ROOSEVELT WATER CONSERVATION DISTRICT	GSF	Phoenix	85,000.00
NEW MAGMA IRRIGATION & DRAINAGE DISTRICT	GSF	Phoenix	75,000.00
MARICOPA WATER DISTRICT	GSF	Phoenix	40,000.00
GILA RIVER INDIAN IRRIGATION AND DRAINAGE DISTRICT (PHOENIX)	GSF	Phoenix	37,520.00
QUEEN CREEK IRRIGATION DISTRICT	GSF	Phoenix	22,000.00
TONOPAH IRRIGATION DISTRICT	GSF	Phoenix	15,000.00
CHANDLER HEIGHTS CITRUS IRRIGATION DISTRICT	GSF	Phoenix	3,000.00
<b>SUBTOTAL PHOENIX AMA</b>			<b>819,520.00</b>
MARICOPA-STANFIELD IRRIGATION & DRAINAGE DISTRICT	GSF	Pinal	120,000.00
CENTRAL ARIZONA IRRIGATION & DRAINAGE DISTRICT	GSF	Pinal	110,000.00
HOHOKAM IRRIGATION AND DRAINAGE DISTRICT	GSF	Pinal	82,000.00
GILA RIVER INDIAN IRRIGATION AND DRAINAGE DISTRICT (PINAL)	GSF	Pinal	18,480.00
<b>SUBTOTAL PINAL AMA</b>			<b>330,480.00</b>
CENTRAL AVRA VALLEY STORAGE AND RECOVERY PROJECT	USF	Tucson	75,000.00
SOUTHERN AVRA VALLEY STORAGE AND RECOVERY PROJECT	USF	Tucson	75,000.00
LOWER SANTA CRUZ RECHARGE PROJECT	USF	Tucson	50,000.00
PIMA MINE ROAD	USF	Tucson	30,000.00
AVRA VALLEY RECHARGE PROJECT	USF	Tucson	11,000.00
CORTARO MARANA IRRIGATION DISTRICT	GSF	Tucson	20,000.00
BKW FARMS	GSF	Tucson	14,316.66
KAI FARMS (AVRA VALLEY)	GSF	Tucson	12,513.37
KAI FARMS (RED ROCK)	GSF	Tucson	11,231.00
<b>SUBTOTAL TUCSON AMA</b>			<b>299,061.03</b>
VIDLER WATER COMPANY RECHARGE PROJECT	USF	Outside	100,000.00
<b>GRAND TOTAL</b>			<b>1,549,061.03</b>

**Table 2: Credits Accrued from AWBA Water Storage through 2015 by Recharge Project<sup>1</sup>**

FACILITY NAME	FACILITY TYPE	AMA	INTRASTATE CREDITS	INTERSTATE CREDITS	TOTAL CREDITS
AGUA FRIA	USF	Phoenix	101,597	-	101,597
GRANITE REEF UNDERGROUND STORAGE PROJECT	USF	Phoenix	403,102	-	403,102
HASSAYAMPA RECHARGE FACILITY MANAGED	USF	Phoenix	-	-	-
HIEROGLYPHIC MOUNTAINS RECHARGE PROJECT	USF	Phoenix	85,780	-	85,780
SUPERSTITION MOUNTAINS RECHARGE PROJECT	USF	Phoenix	21,551	-	21,551
TONOPAH DESERT RECHARGE PROJECT	USF	Phoenix	428,105	51,009	479,114
CHANDLER HEIGHTS CITRUS IRRIGATION DISTRICT	GSF	Phoenix	4,517	-	4,517
GILA RIVER INDIAN IRRIGATION AND DRAINAGE DISTRICT (PHOENIX)	GSF	Phoenix	88,313	-	88,313
MARICOPA WATER DISTRICT	GSF	Phoenix	47,171	-	47,171
NEW MAGMA IRRIGATION & DRAINAGE DISTRICT	GSF	Phoenix	353,519	-	353,519
QUEEN CREEK IRRIGATION DISTRICT	GSF	Phoenix	110,575	-	110,575
ROOSEVELT WATER CONSERVATION DISTRICT	GSF	Phoenix	58,575	-	58,575
SALT RIVER PROJECT	GSF	Phoenix	77,327	-	77,327
TONOPAH IRRIGATION DISTRICT	GSF	Phoenix	2,368	-	2,368
<b>PHOENIX AMA SUBTOTAL</b>			<b>1,782,502</b>	<b>51,009</b>	<b>1,833,511</b>
CENTRAL ARIZONA IRRIGATION & DRAINAGE DISTRICT	GSF	Pinal	225,519	117,514	343,033
GILA RIVER INDIAN IRRIGATION AND DRAINAGE DISTRICT (PINAL)	GSF	Pinal	17,077	-	17,077
HOHOKAM IRRIGATION AND DRAINAGE DISTRICT	GSF	Pinal	383,918	71,427	455,345
MARICOPA-STANFIELD IRRIGATION & DRAINAGE DISTRICT	GSF	Pinal	376,026	201,300	577,326
<b>PINAL AMA SUBTOTAL</b>			<b>1,002,541</b>	<b>390,241</b>	<b>1,392,782</b>
AVRA VALLEY RECHARGE PROJECT	USF	Tucson	61,209	1,315	62,525
CENTRAL AVRA VALLEY STORAGE AND RECOVERY PROJECT	USF	Tucson	90,444	4,717	95,161
LOWER SANTA CRUZ RECHARGE PROJECT	USF	Tucson	244,525	73,930	318,456
PIMA MINE ROAD	USF	Tucson	102,298	29,828	132,127
SOUTHERN AVRA VALLEY STORAGE AND RECOVERY PROJECT	USF	Tucson	117,065	-	117,065
BKW FARMS	GSF	Tucson	2,116	-	2,116
CORTARO MARANA IRRIGATION DISTRICT	GSF	Tucson	13,110	-	13,110
KAI FARMS (AVRA VALLEY)	GSF	Tucson	-	-	-
KAI FARMS (RED ROCK)	GSF	Tucson	14,336	-	14,336
<b>TUCSON AMA SUBTOTAL</b>			<b>645,103</b>	<b>109,791</b>	<b>754,894</b>
VIDLER WATER COMPANY RECHARGE PROJECT	USF	Outside	-	-	-
<b>GRAND TOTAL</b>			<b>3,430,145</b>	<b>551,041</b>	<b>3,981,187</b>

<sup>1</sup> Does not include credits purchased or transferred to the AWBA.

### Additional Recharge Projects Not Used by AWBA

In addition to facilities where the AWBA currently stores, there are another 70 permitted recharge facilities in the Phoenix, Pinal and Tucson AMAs with a total capacity of around 460,000 acre-feet. Details about all of these facilities are presented in the table in Appendix B to this Inventory. Appendix

B lists the facility permit number and duration, facility name, AMA, permit holder, permit volume, type of water and recharge method.

Currently, the AWBA does not hold water storage permits for effluent storage. Since shortages to CAP water supplies are anticipated, the AWBA may seek effluent supplies and storage facilities in the future in order to meet its firming goals. Of the 70 permitted recharge facilities listed in Appendix B, 58 are permitted to store effluent.

#### Phoenix Active Management Area

Of the 70 other recharge facilities, there are 43 facilities located in the Phoenix AMA with a capacity of around 308,000 acre-feet. Forty-one of the facilities are USFs and 2 are GSFs. Thirty-six of the USFs are permitted to store effluent with a collective capacity of nearly 290,000 acre-feet. These projects are small in magnitude, with only five facilities having capacity in excess of 10,000 acre-feet per year: 1) SRP New River Agua Fria Underground Storage Project, 2) Roosevelt Irrigation District, 3) City of Scottsdale Water Campus, 4), Chandler Tumbleweed Regional Park, 5) City of Chandler Ocotillo Recharge and Recovery Project.

Many of the effluent facilities are operated by utilities holding CAP subcontracts. These projects may present opportunities in the future for firming CAP subcontracts through effluent purchase arrangements.

#### Pinal Active Management Area

Of the 70 other facilities, there are currently 12 permitted storage facilities located in the Pinal AMA, with a capacity of just over 30,000 acre-feet, all of which are USFs. All but one of these facilities are permitted to store effluent with a collective capacity of just over 20,000 acre-feet. These projects are small in magnitude with only one facility, Arizona Water Company Pinal Valley Recharge Project, having a capacity in excess of 10,000 acre-feet per year which is permitted to store CAP water. Two of the facilities are operated by utilities holding CAP subcontracts and may also present opportunities in the future for firming CAP subcontracts through CAP or effluent purchase arrangements.

#### Tucson Active Management Area

Of the 70 other facilities, there are currently 15 permitted storage facilities located in the Tucson AMA with a capacity around 120,000 acre-feet. Twelve of the facilities are USFs permitted with a storage capacity of just under 90,000 acre-feet per year. All of these projects are effluent projects except one. There are three GSFs with a permitted capacity of around 33,000 acre-feet all of which are permitted

to use only CAP water. Two entities operating recharge facilities in the Tucson AMA also hold CAP subcontracts including the City of Tucson and the Town of Marana.

### Outside AMAs

There are ten recharge facilities located outside the three AMAs where the AWBA operates, including one facility for which the AWBA has held a water storage permit for in the past: Vidler Water Company Recharge Project. The remaining nine facilities are located in areas remote to the three county area and have been excluded from this analysis.

### **Conclusion**

The determination regarding whether enough storage facility capacity exists in Arizona to meet the AWBA's water storage needs for the next ten years is made based on whether there is storage facility capacity available to the AWBA in a volume greater than the total proposed volume of water available for delivery by the AWBA. As indicated earlier, according to the most recent Ten-Year Plan, approximately 253,000 acre-feet of capacity is available at the recharge facilities where the AWBA currently stores water.

As shortage conditions become more probable, Excess CAP water is becoming less reliable as a water source. Given the AWBA's most current Ten-Year Plan assumes no Excess CAP water will be available except in 2017, the combination of capacity and available supply are manageable. Even if normal conditions prevail, the AWBA would only have about 725,000 acre-feet of water to store over the next ten years ranging each year from between 60,000 and 100,000 acre-feet. Given these projections, the AWBA clearly has sufficient capacity to meet demands. In the event conditions change and there is more water available to the AWBA, storage capacity in the Phoenix AMA could potentially be expanded to include facilities where the AWBA does not currently have a water storage permit.

What is perhaps more interesting about this facility inventory is the potential opportunities to partner with water utilities operating effluent recharge projects, particularly those holding CAP subcontracts. With Excess CAP supplies dwindling, the AWBA may want to explore these opportunities more fully.

**APPENDIX A:**  
**RECHARGE FACILITIES WHERE THE AWBA HAS HELD  
OR STILL HOLDS WATER STORAGE PERMITS**

APPENDIX A - RECHARGE FACILITIES WHERE THE AWBA HAS HELD OR STILL HOLDS WATER STORAGE PERMITS							
PERMIT NUMBER	DURATION	FACILITY NAME	AMA	PERMIT HOLDER	PERMIT VOLUME	TYPE OF WATER	RECHARGE METHOD
71-569776.0007	(09/04/2012 to 05/31/2019)	AGUA FRIA CONSTRUCTED	Phoenix	CENTRAL ARIZONA WATER CONSERVATION DISTRICT	100,000.00	CAP	BASINS
71-569775.0006	(02/13/2012 to 05/31/2019)	AGUA FRIA MANAGED	Phoenix	CENTRAL ARIZONA WATER CONSERVATION DISTRICT	100,000.00	CAP	IN-CHANNEL MANAGED
72-534753.0000	(01/01/1995 to 12/31/1995)	CHANDLER HEIGHTS CITRUS IRRIGATION DISTRICT	Phoenix	CENTRAL ARIZONA WATER CONSERVATION DISTRICT	3,000.00	CAP	INDIRECT
72-211277.0001 (PHX)	(06/16/2006 to 12/31/2010)	GILA RIVER INDIAN IRRIGATION AND DRAINAGE DISTRICT (PHOENIX)	Phoenix	GILA RIVER INDIAN IRRIGATION AND DRAINAGE DISTRICT	37,520.00	CAP	INDIRECT
71-516371.0001	(03/13/2012 to 03/13/2032)	GRANITE REEF UNDERGROUND STORAGE PROJECT	Phoenix	SALT RIVER PROJECT	93,000.00	CAP, EFFLUENT, OTHER SURFACE WATER	BASINS
71-216387.0002	(04/18/2013 to 07/29/2031)	HASSAYAMPA RECHARGE FACILITY MANAGED	Phoenix	HASSAYAMPA VENTURES, LLC	50,000.00	CAP	IN-CHANNEL MANAGED
71-584466.0003	(09/04/2012 to 12/31/2021)	HIEROGLYPHIC MTNS RECHARGE PROJECT	Phoenix	CENTRAL ARIZONA WATER CONSERVATION DISTRICT	35,000.00	CAP	BASINS
72-558246.0007	(06/19/2015 to 06/19/2025)	MARICOPA WATER DISTRICT	Phoenix	MARICOPA WATER DISTRICT	40,000.00	CAP	INDIRECT
72-534888.0005	(09/11/2014 to 07/31/2017)	NEW MAGMA IRRIGATION & DRAINAGE DISTRICT	Phoenix	NEW MAGMA IRRIGATION & DRAINAGE DISTRICT	75,000.00	CAP	INDIRECT
72-534550.0005	(08/03/2012 to 12/27/2015)	QUEEN CREEK IRRIGATION DISTRICT	Phoenix	QUEEN CREEK IRRIGATION DISTRICT	22,000.00	CAP	INDIRECT
72-545695.0006	(01/11/2016 to 12/31/2020)	ROOSEVELT WATER CONSERVATION DISTRICT	Phoenix	ROOSEVELT WATER CONSERVATION DISTRICT	85,000.00	OTHER SURFACE WATER, CAP, EFFLUENT	INDIRECT

APPENDIX A - RECHARGE FACILITIES WHERE THE AWBA HAS HELD OR STILL HOLDS WATER STORAGE PERMITS							
PERMIT NUMBER	DURATION	FACILITY NAME	AMA	PERMIT HOLDER	PERMIT VOLUME	TYPE OF WATER	RECHARGE METHOD
72-553133.0005	(01/25/2013 to 04/23/2019)	SALT RIVER PROJECT	Phoenix	SALT RIVER PROJECT	89,000.00	CAP, OTHER SURFACE WATER	INDIRECT
71-207702.0002	(11/08/2011 to 01/15/2028)	SUPERSTITION MOUNTAINS RECHARGE PROJECT	Phoenix	CENTRAL ARIZONA WATER CONSERVATION DISTRICT	25,000.00	CAP	BASINS
71-593305.0002	(07/27/2009 to 09/01/2025)	TONOPAH DESERT RECHARGE PROJECT	Phoenix	CENTRAL ARIZONA WATER CONSERVATION DISTRICT	150,000.00	CAP	BASINS
72-534439.0004	(08/02/2012 to 11/16/2016)	TONOPAH IRRIGATION DISTRICT	Phoenix	TONOPAH IRRIGATION DISTRICT	15,000.00	CAP	INDIRECT
72-531382.0005	(07/31/2012 to 12/31/2017)	CENTRAL ARIZONA IRRIGATION & DRAINAGE DISTRICT	Pinal	CENTRAL ARIZONA IRRIGATION AND DRAINAGE DISTRICT	110,000.00	CAP	INDIRECT
72-211277.0001 (PIN)	(06/16/2006 to 12/31/2010)	GILA RIVER INDIAN IRRIGATION AND DRAINAGE DISTRICT (PINAL)	Pinal	GILA RIVER INDIAN IRRIGATION AND DRAINAGE DISTRICT	18,480.00	CAP	INDIRECT
72-534489.0005	(07/25/2014 to 07/25/2019)	HOHOKAM IRRIGATION AND DRAINAGE DISTRICT	Pinal	HOHOKAM IRRIGATION AND DRAINAGE DISTRICT	82,000.00	CAP	INDIRECT
72-531381.0005	(09/20/2012 to 12/31/2019)	MARICOPA-STANFIELD IRRIGATION & DRAINAGE DISTRICT	Pinal	MARICOPA STANFIELD IRRIGATION DISTRICT	120,000.00	CAP	INDIRECT
71-564896.0004	(07/26/2012 to 03/27/2018)	AVRA VALLEY RECHARGE PROJECT	Tucson	METROPOLITAN DOMESTIC WATER IMPROVEMENT DISTRICT	11,000.00	CAP	BASINS
72-538133.0005	(03/31/2015 to 03/31/2020)	BKW FARMS	Tucson	BKW FARMS, INC.	14,316.66	CAP, EFFLUENT	INDIRECT
71-578806.0003	(07/07/2015 to 07/07/2035)	CENTRAL AVRA VALLEY STORAGE AND RECOVERY PROJECT	Tucson	CITY OF TUCSON/TUCSON WATER	75,000.00	CAP	BASINS
72-538100.0007	(03/25/2014 to 03/25/2019)	CORTARO MARANA IRRIGATION DISTRICT	Tucson	CORTARO MARANA IRRIGATION DISTRICT	20,000.00	CAP, EFFLUENT	INDIRECT

<b>APPENDIX A - RECHARGE FACILITIES WHERE THE AWBA HAS HELD OR STILL HOLDS WATER STORAGE PERMITS</b>							
<b>PERMIT NUMBER</b>	<b>DURATION</b>	<b>FACILITY NAME</b>	<b>AMA</b>	<b>PERMIT HOLDER</b>	<b>PERMIT VOLUME</b>	<b>TYPE OF WATER</b>	<b>RECHARGE METHOD</b>
72-564430.0000	(04/02/1998 to 04/02/2008)	KAI FARMS (AVRA VALLEY)	Tucson	HERB KAI	12,513.37	CAP	INDIRECT
72-558092.0003	(08/06/2012 to 11/01/2016)	KAI FARMS (RED ROCK)	Tucson	HERB KAI	11,231.00	CAP	INDIRECT
71-561366.0003	(04/29/2009 to 02/28/2019)	LOWER SANTA CRUZ RECHARGE PROJECT	Tucson	CENTRAL ARIZONA WATER CONSERVATION DISTRICT	50,000.00	CAP	BASINS
71-577501.0002	(06/16/2008 to 09/06/2020)	PIMA MINE ROAD	Tucson	CENTRAL ARIZONA WATER CONSERVATION DISTRICT	30,000.00	CAP	BASINS
71-211276.0004	(06/11/2015 to 12/24/2034)	SOUTHERN AVRA VALLEY STORAGE AND RECOVERY PROJECT	Tucson	CITY OF TUCSON/TUCSON WATER	75,000.00	CAP	BASINS
71-576699.0004	(09/03/2004 to 09/30/2020)	VIDLER WATER COMPANY RECHARGE PROJECT	Outside	VIDLER WATER COMPANY	100,000.00	CAP	BASINS, VADOSE ZONE WELLS

**APPENDIX B:**  
**RECHARGE FACILITIES WHERE AWBA DOES  
NOT HOLD A WATER STORAGE PERMIT**

APPENDIX B - RECHARGE FACILITIES WHERE AWBA DOES NOT HOLD A WATER STORAGE PERMIT							
PERMIT NUMBER	DURATION	FACILITY NAME	AMA	PERMIT HOLDER	PERMIT VOLUME	WATER TYPE	RECHARGE METHOD
71-565257.0004	(07/01/2016 to 12/31/2023)	AVONDALE WETLANDS USF	Phoenix	CITY OF AVONDALE	20,000.00	EFFLUENT, OTHER SURFACE WATER, CAP	BASINS
71-205381.0002	(03/11/2010 to 12/31/2029)	BUCKEYE TARTESSO WATER RECLAMATION FACILITY USF	Phoenix	CITY OF BUCKEYE	1,344.20	EFFLUENT	BASINS
71-541455.0002	(01/27/2015 to 01/27/2035)	CHANDLER OCOTILLO BRINE REDUCTION FACILITY (FMLY INTEL) USF	Phoenix	CITY OF CHANDLER	3,360.00	EFFLUENT	INJECTION/ASR WELLS
71-560347.0006	(03/15/2010 to 05/06/2023)	CHANDLER TUMBLEWEED REGIONAL PARK USF	Phoenix	CITY OF CHANDLER	11,200.00	EFFLUENT	INJECTION/ASR WELLS
71-588551.0001	(10/29/2009 to 11/30/2023)	CITY OF CHANDLER/CHANDLER HEIGHTS RECHARGE PROJECT USF	Phoenix	CITY OF CHANDLER	2,240.00	EFFLUENT	BASINS
71-583023.0002	(01/28/2010 to 10/04/2024)	CITY OF CHANDLER OCOTILLO RECHARGE AND RECOVERY FACILITY USF	Phoenix	CITY OF CHANDLER	11,200.00	EFFLUENT	INJECTION/ASR WELLS
71-216386.0001	(02/24/2012 to 11/30/2029)	CITY OF PHOENIX ASR 6A-WELL 299 USF	Phoenix	CITY OF PHOENIX	1,882.00	CAP	INJECTION/ASR WELLS
71-220047.0001	(10/22/2015 to 01/10/2032)	CITY OF PHOENIX ASR 9A-WELL 300 USF	Phoenix	CITY OF PHOENIX	1,060.00	CAP	INJECTION/ASR WELLS
71-222506.0000	(07/14/2014 to 07/14/2034)	CITY OF PHOENIX CAVE CREEK ASR-1 (CCASR-1) USF	Phoenix	CITY OF PHOENIX	2,903.00	CAP	INJECTION/ASR WELLS
71-595199.0003	(10/06/2008 to 12/17/2024)	CITY OF PHOENIX CAVE CREEK WASTEWATER FACILITY USF	Phoenix	CITY OF PHOENIX	8,961.00	EFFLUENT	VADOSE ZONE WELLS
71-583022.0002	(06/13/2005 to 01/31/2022)	CITY OF SCOTTSDALE NORTH SCOTTSDALE AS&R PROJECT USF	Phoenix	CITY OF SCOTTSDALE	3,642.00	CAP	VADOSE ZONE WELLS
71-560648.0003	(12/07/2008 to 12/31/2025)	CITY OF SCOTTSDALE WATER CAMPUS USF	Phoenix	CITY OF SCOTTSDALE	21,514.00	CAP, EFFLUENT	INJECTION/ASR WELLS, VADOSE ZONE WELLS

APPENDIX B - RECHARGE FACILITIES WHERE AWBA DOES NOT HOLD A WATER STORAGE PERMIT							
PERMIT NUMBER	DURATION	FACILITY NAME	AMA	PERMIT HOLDER	PERMIT VOLUME	WATER TYPE	RECHARGE METHOD
71-574911.0002	(02/12/2016 to 08/17/2020)	CITY OF SCOTTSDALE WESTWORLD GOLF COURSE USF	Phoenix	CITY OF SCOTTSDALE	1,000.00	CAP	VADOSE ZONE WELLS
71-562521.0004	(04/18/2013 to 11/30/2021)	CITY OF SURPRISE SPA-1 (SOUTH) USF	Phoenix	CITY OF SURPRISE	8,066.00	EFFLUENT	BASINS, VADOSE ZONE WELLS
71-218761.0001	(11/22/2011 to 09/14/2031)	CITY OF SURPRISE SPA-2 REGIONAL WRF USF	Phoenix	CITY OF SURPRISE	2,340.00	EFFLUENT	BASINS, VADOSE ZONE WELLS
71-218760.0000	(01/09/2012 to 01/09/2032)	CITY OF SURPRISE SPA-3 WATER RECLAMATION FACILITY USF	Phoenix	CITY OF SURPRISE	4,256.00	EFFLUENT	BASINS, VADOSE ZONE WELLS
71-211282.0000	(06/16/2008 to 06/16/2028)	EL MIRAGE CONSTRUCTED RECHARGE FACILITY USF	Phoenix	CITY OF EL MIRAGE	2,240.00	EFFLUENT	BASINS
71-534362.0004	(12/16/2013 to 04/14/2020)	EPCOR SUN CITY WEST USF	Phoenix	EPCOR (SUN CITY WEST) WATER ARIZONA INC.	5,600.00	EFFLUENT	BASINS
71-207708.0001	(12/16/2013 to 03/19/2027)	EPCOR VERRADO RECHARGE FACILITY USF	Phoenix	EPCOR (AGUA FRIA) WATER ARIZONA INC.	500.00	EFFLUENT	VADOSE ZONE WELLS
71-566962.0009	(12/16/2013 to 07/02/2015)	EPCOR WATER ARIZONA INC. ANTHEM USF	Phoenix	EPCOR (ANTHEM) WATER ARIZONA INC.	500.00	CAP, EFFLUENT	TRENCHES
71-591940.0001	(04/24/2008 to 08/10/2024)	FOUNTAIN HILLS SANITARY DISTRICT USF	Phoenix	FOUNTAIN HILLS SANITARY DISTRICT	2,240.60	EFFLUENT	INJECTION/ASR WELLS
71-591934.0001	(09/08/2010 to 01/31/2024)	GLENDALE ARROWHEAD RANCH RECHARGE FACILITY USF	Phoenix	CITY OF GLENDALE	2,300.00	EFFLUENT	INJECTION/ASR WELLS, VADOSE ZONE WELLS
71-586730.0000	(03/12/2003 to 03/31/2023)	GLENDALE WESTERN AREA RECHARGE FACILITY USF	Phoenix	CITY OF GLENDALE	7,841.00	EFFLUENT	BASINS, TRENCHES, VADOSE ZONE WELLS
71-591929.0000	(04/14/2003 to 04/30/2023)	GOLD CANYON WWTP USF	Phoenix	GOLD CANYON SEWER COMPANY	1,120.00	EFFLUENT	BASINS

APPENDIX B - RECHARGE FACILITIES WHERE AWBA DOES NOT HOLD A WATER STORAGE PERMIT							
PERMIT NUMBER	DURATION	FACILITY NAME	AMA	PERMIT HOLDER	PERMIT VOLUME	WATER TYPE	RECHARGE METHOD
71-223658.0000	(08/18/2015 to 08/18/2035)	GOODYEAR VIP USF	Phoenix	CITY OF GOODYEAR	5,000.00	EFFLUENT	VADOSE ZONE WELLS
71-224500.0000	(07/28/2015 to 07/28/2017)	GRIC OLBERG DAM PILOT SCALE USF	Phoenix	GILA RIVER INDIAN COMMUNITY	7,500.00	CAP	BASINS
71-224061.0000	(12/24/2015 to 12/24/2035)	JOHNSON UTILITIES PECAN WATER RECLAMATION PLANT USF	Phoenix	JOHNSON UTILITIES - PHOENIX	4,480.00	EFFLUENT	BASINS, VADOSE ZONE WELLS
71-211287.0001	(03/29/2010 to 12/11/2028)	JOHNSON UTILITIES SECTION 11 RECHARGE FACILITY	Phoenix	JOHNSON UTILITIES - PHOENIX	1,680.00	EFFLUENT	BASINS
71-224000.0000	(07/17/2015 to 07/17/2035)	LIBERTY AQUIFER REPLENISHMENT FACILITY (LARF) USF	Phoenix	LIBERTY UTILITIES (LITCHFIELD PARK WATER & SEWER) CORP.	4,000.00	EFFLUENT	BASINS
71-546845.0002	(05/22/2006 to 05/02/2016)	OCOTILLO MANAGEMENT GROUP USF	Phoenix	OCOTILLO MANAGEMENT GROUP	500.00	EFFLUENT	VADOSE ZONE WELLS
71-552497.0004	(03/02/2010 to 12/31/2024)	PEORIA BEARDSLEY ROAD WATER RECLAMATION FACILITY USF	Phoenix	CITY OF PEORIA	4,480.00	EFFLUENT	BASINS
71-220046.0001	(02/14/2013 to 11/07/2031)	PEORIA VISTANCIA RECHARGE FACILITY USF	Phoenix	CITY OF PEORIA	673.00	EFFLUENT	VADOSE ZONE WELLS
71-560427.0002	(04/03/2008 to 12/10/2027)	PIMA UTILITY SUN LAKES USF	Phoenix	PIMA UTILITY COMPANY	732.00	EFFLUENT	INJECTION/ASR WELLS
71-588558.0005	(06/30/2011 to 12/22/2025)	SRP NEW RIVER AGUA FRIA UNDERGROUND STORAGE PROJECT USF	Phoenix	SALT RIVER PROJECT	75,000.00	EFFLUENT, CAP, OTHER SURFACE WATER	BASINS
71-584469.0002	(06/03/2016 to 03/07/2025)	SUPERSTITION MOUNTAINS COMMUNITY FACILITIES DISTRICT #1 USF	Phoenix	SUPERSTITION MOUNTAINS COMMUNITY FACILITIES DIST. NO. 1	2,352.00	EFFLUENT	BASINS, VADOSE ZONE WELLS
71-563943.0004	(09/05/2014 to 01/31/2020)	TEMPE KEN MCDONALD GOLF COURSE USF	Phoenix	CITY OF TEMPE	567.00	CAP, OTHER SURFACE WATER	INJECTION/ASR WELLS

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PERMIT NUMBER	DURATION	FACILITY NAME	AMA	PERMIT HOLDER	PERMIT VOLUME	WATER TYPE	RECHARGE METHOD
71-205388.0000	(08/25/2006 to 12/31/2016)	THE ESTATES AT LAKESIDE USF	Phoenix	LAKE PLEASANT SEWER COMPANY	67.20	EFFLUENT	INJECTION/ASR WELLS
71-591935.0000	(11/30/2004 to 11/30/2024)	TOWN OF GILBERT MUNICIPAL CENTER USF	Phoenix	TOWN OF GILBERT	2,240.00	EFFLUENT	VADOSE ZONE WELLS
71-520379.0003	(11/21/2014 to 11/21/2034)	TOWN OF GILBERT NEELY RECHARGE FACILITY USF	Phoenix	TOWN OF GILBERT	2,240.00	EFFLUENT	BASINS
71-564416.0002	(06/08/2009 to 11/30/2018)	TOWN OF GILBERT RIPARIAN PRESERVE USF	Phoenix	TOWN OF GILBERT	4,369.00	CAP, EFFLUENT, OTHER SURFACE WATER	BASINS
71-595198.0001	(09/09/2008 to 11/30/2024)	TOWN OF GILBERT SOUTH RECHARGE FACILITY USF	Phoenix	TOWN OF GILBERT	4,032.00	EFFLUENT	BASINS, VADOSE ZONE WELLS
72-534978.0000	(12/30/1994 to 12/31/2022)	LPSCO GSF	Phoenix	LITCHFIELD PARK SERVICE CO DBA LIBERTY WATER	840.00	EFFLUENT	INDIRECT
72-572386.0004	(09/25/2014 to 10/26/2020)	ROOSEVELT IRRIGATION DISTRICT GSF	Phoenix	ROOSEVELT IRRIGATION DISTRICT	60,000.00	EFFLUENT	INDIRECT
71-211290.0000	(03/29/2010 to 03/29/2030)	ANTHEM AT MERRILL RANCH RECHARGE FACILITY	Pinal	JOHNSON UTILITIES - PINAL	3,360.00	EFFLUENT	BASINS, VADOSE ZONE WELLS
71-209000.0002	(05/23/2012 to 07/25/2028)	ARIZONA CITY SANITARY DISTRICT USF	Pinal	ARIZONA CITY SANITARY DISTRICT	1,120.00	EFFLUENT	BASINS
71-224242.0001	(04/28/2016 to 01/19/2036)	AWC PINAL VALLEY RECHARGE USF	Pinal	ARIZONA WATER COMPANY - PINAL VALLEY	10,884.00	CAP	BASINS
71-221491.0000	(04/18/2013 to 04/18/2033)	CASA GRANDE CONSTRUCTED RECHARGE FACILITY	Pinal	CITY OF CASA GRANDE	2,100.00	EFFLUENT	BASINS
71-221492.0000	(12/16/2013 to 12/16/2033)	CASA GRANDE MANAGED RECHARGE FACILITY USF	Pinal	CITY OF CASA GRANDE	3,500.00	EFFLUENT	IN-CHANNEL MANAGED

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PERMIT NUMBER	DURATION	FACILITY NAME	AMA	PERMIT HOLDER	PERMIT VOLUME	WATER TYPE	RECHARGE METHOD
71-211286.0000	(11/25/2011 to 11/25/2031)	EJR RANCH USF	Pinal	PICACHO SEWER CO	272.00	EFFLUENT	INJECTION/ASR WELLS
71-220045.0000	(11/17/2011 to 11/17/2031)	ELOY DETENTION CENTER USF	Pinal	CORRECTIONS CORPORATION OF AMERICA	2,726.00	EFFLUENT	BASINS
71-591932.0001	(04/09/2012 to 02/03/2024)	ELOY RECLAIMED WATER RECHARGE PROJECT	Pinal	CITY OF ELOY	2,240.00	EFFLUENT	BASINS
71-211279.0000	(07/25/2007 to 07/25/2027)	GLOBAL WATER - PALO VERDE UTILITIES COMPANY	Pinal	GLOBAL WATER - PALO VERDE UTILITIES CO	1,120.00	EFFLUENT	INJECTION/ASR WELLS
71-211285.0000	(11/25/2011 to 11/25/2031)	SANTA ROSA UTILITY COMPANY USF	Pinal	SANTA ROSA UTILITY COMPANY	2,577.00	EFFLUENT	BASINS, INJECTION/ASR WELLS
71-216374.0000	(10/17/2008 to 10/17/2028)	SOUTHWEST WATER RECLAMATION FACILITY (CAMPUS 2)	Pinal	GLOBAL WATER - PALO VERDE UTILITIES CO	1,120.00	EFFLUENT	INJECTION/ASR WELLS
71-591938.0002	(02/25/2008 to 12/31/2023)	SUN LAKES AT CASA GRANDE EFFLUENT RECHARGE FACILITY	Pinal	PICACHO SEWER CO	340.40	EFFLUENT	BASINS, VADOSE ZONE WELLS
71-224073.0000	(09/14/2015 to 09/14/2033)	BLACK WASH USF - PIMA COUNTY RWRD	Tucson	PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT	4,480.00	EFFLUENT	BASINS
71-591928.0001	(02/11/2013 to 11/30/2023)	LOWER SANTA CRUZ RIVER MANAGED USF	Tucson	CORTARO-MARANA IRRIGATION DISTRICT	43,000.00	EFFLUENT	IN-CHANNEL MANAGED
71-563876.0007	(06/10/2009 to 11/24/2028)	MARANA HIGH PLAINS EFFLUENT RECHARGE PROJECT USF	Tucson	PIMA COUNTY REGIONAL FLOOD CONTROL DISTRICT	600.00	EFFLUENT, OTHER SURFACE WATER	BASINS
71-224578.0000	(04/07/2016 to 04/07/2036)	MARANA WRF RECHARGE PROJECT USF	Tucson	TOWN OF MARANA	3,920.00	EFFLUENT	BASINS
71-211284.0002	(06/19/2015 to 02/10/2029)	PCRWRD CORONA DE TUCSON RECHARGE FACILITY USF	Tucson	PIMA COUNTY REGIONAL WASTEWATER RECLAMATION DEPARTMENT	1,120.00	EFFLUENT	BASINS

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PERMIT NUMBER	DURATION	FACILITY NAME	AMA	PERMIT HOLDER	PERMIT VOLUME	WATER TYPE	RECHARGE METHOD
71-222410.0000	(11/25/2014 to 11/25/2034)	PROJECT RENEWS CONSTRUCTED UNDERGROUND STORAGE FACILITY	Tucson	JPAR, LLC	3,000.00	CAP	BASINS
71-581379.0001	(12/17/2003 to 04/02/2021)	ROBSON RANCH QUAIL CREEK, LLC USF	Tucson	ROBSON RANCH QUAIL CREEK, LLC	2,240.30	EFFLUENT	BASINS
71-221721.0000	(12/02/2013 to 12/02/2033)	SADDLEBROOKE WATER RECLAMATION PLANT CONSTRUCTED USF	Tucson	SADDLEBROOKE UTILITY COMPANY	2,090.00	EFFLUENT	BASINS, INJECTION/ASR WELLS
71-545944.0002	(02/11/2013 to 05/31/2019)	SANTA CRUZ MANAGED USF	Tucson	CITY OF TUCSON/TUCSON WATER	9,307.00	EFFLUENT	IN-CHANNEL MANAGED
71-520083.0002	(08/19/2014 to 05/19/2028)	SWEETWATER RECHARGE FACILITIES USF	Tucson	CITY OF TUCSON/TUCSON WATER	13,000.00	EFFLUENT	BASINS
71-595209.0000	(11/30/2007 to 11/30/2027)	TOWN OF SAHUARITA	Tucson	TOWN OF SAHUARITA PUBLIC WORKS	896.00	EFFLUENT	BASINS
71-225060.0000	(06/03/2016 to 06/03/2036)	TUCSON WATER SHARP USF	Tucson	CITY OF TUCSON/TUCSON WATER	4,000.00	EFFLUENT	BASINS
72-084101.0000	N/A	ASARCO FACILITY	Tucson	ASARCO LLC	10,000.00	CAP	INDIRECT
72-563502.0004	(02/24/2015 to 02/24/2020)	BKW MILEWIDE GSF	Tucson	BKW FARMS, INC.	612.80	CAP	INDIRECT
72-584465.0002	(08/03/2012 to 12/31/2016)	FARMERS INVESTMENT COMPANY GSF	Tucson	FARMERS INVESTMENT COMPANY	22,000.00	CAP	INDIRECT